

REMARKS

Claims 1 – 17 are pending. Claims 1 - 12 have been amended. New claims 15, 16 and 17 have been added.

Claims 1 – 4, 6 – 8 and 10 – 14 were rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Japanese Patent No. 11-307673 (Haruo et al.).

Claim 1 has been amended to recite “a portion of the second substrate passes between at least two of the electrodes and extends from the second main surface at least as far as the electrodes extend from the second main surface.” Support for this amendment can be found, for example, on page 11, lines 12 – 18 and with reference to figure 1B. No new matter has been added. Referring, for example, to figure 1B of the present application, a portion of second insulating substrate 48 passes between each adjacent pair of electrodes (i.e., terminals 50, 51, 52 and 53). Additionally, the second insulating substrate 48 extends above the second main surface 412 of the second insulating substrate 48 a greater distance than any of the electrodes 50, 51, 52 or 53 extend from the second main surface 412.

The Haruo et al. patent discloses a semiconductor device having a first insulating substrate 11a with through holes 17, 18. A semiconductor chip 12 is fixed with an adhesive 22 to an island section 13 of a conductive pattern on a first surface of the first insulating substrate 11a. Bipolar electrodes 15, 16 are positioned at a second surface of the first insulating substrate 11a that is opposite the first surface. Bipolar electrode 15 is electrically connected to the island section 13 via through hole 17. A resin layer 24 is formed on the first insulating substrate 11a. A second insulating substrate 11b is positioned near the first insulating substrate 11a. External electrodes 19, 21 are exposed.

The Haruo et al. patent neither discloses nor suggests “a portion of the second substrate [that] passes between at least two of the electrodes and *extends from the second main surface at least as far as the electrodes extend from the second main surface*” as recited by claim 1.
(*Emphasis added*)

In contrast to the subject matter of pending claim 1, the second insulating substrate 11b of the Haruo et al. patent clearly does not extend from the lower surface of first insulating substrate 11a as far as the outer electrodes 19, 20 extend.

One of skill in the art would recognize certain advantages of implementing certain features recited in claim 1. For example, the possibility that a short circuit might occur between adjacent electrodes (e.g., 50, 51, figure 1B) during soldering of the electrodes may be reduced. This may result in improved reliability of finished semiconductor devices, simplified manufacturing processes and an associated reduction in semiconductor device manufacturing costs. Those features and advantages are not disclosed or suggested by the Haruo et al. reference.

For at least the foregoing reasons, claim 1 is allowable over the Haruo et al. patent.

Claims 2 – 4, 6 – 8 and 15 – 17 depend from claim 1 and should, therefore, be allowable for at least the same reasons as claim 1.

New claims 15 – 17 should be allowable for at least the following additional reasons as well.

Claim 15 recites that a “portion of the second substrate extends from the second main surface *farther than* the electrodes extend from the second main surface.” (*Emphasis added*) Support for this amendment can be found, for example, on page 11, lines 12 – 18 and with reference to figure 1B. No new matter has been added.

Referring again to figure 1B of the Haruo et al. patent, the second insulating substrate 11b clearly does not extend from the lower surface of first insulating substrate 11a farther than the outer electrodes 19, 20 extend from the lower surface. Moreover, one of skill in the art would recognize that the possibility of causing a short circuit between adjacent electrodes (e.g., 50, 51, figure 1B) while soldering the electrodes to a conductive element may be reduced by implementing features of claim 15.

For at least these additional reasons, claim 15 should be allowable over the Haruo et al. patent.

Claim 16 recites that “each terminal is exposed . . . at a position that is a distance inside [an] outer periphery [of the second main surface].” Support for this amendment can be found, for example, on page 13, lines 10 - 13 and with reference to figures 1B and 2B. No new matter has been added. Referring, for example, to figure 2B and the corresponding text on page 13, lines 10 - 13, each terminal 50, 51, 52 and 53 is positioned on the second main surface 412 at a distance of approximately 0.05 mm and 0.1 mm from an outer periphery of the second main surface 412.

The Haruo et al. patent neither discloses nor suggests such a feature. Instead, the Haruo et al. patent discloses bipolar electrodes 15, 16 each having an outer edge that is flush with an edge surface of the semiconductor device (*See, e.g.*, figure 1B).

One of ordinary skill in the art would recognize that certain advantages may be realized by implementing features of claim 16. For example, a plurality of semiconductor devices may be diced into individual semiconductor devices without burring the edges of electrode material in the semiconductor devices. This may minimize the possibility that a short circuit might occur between electrodes and adjacent conductive elements. Other manufacturing difficulties associated with burred electrode edges also may be avoided. Accordingly, component reliability may be improved and overall manufacturing costs may be reduced. These features and advantages are not disclosed or suggested by the Haruo et al. reference.

For at least these additional reasons, claim 16 should be allowable over the Haruo et al. patent.

Claim 17 depends from claim 16 and should therefore also be allowable over the Haruo et al. patent for at least the same additional reasons.

Claims 5 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Haruo et al. patent in view of U.S. Patent No. 6,022,763 (Ohmori et al.). Applicant disagrees with these rejections because the Ohmori et al. patent does not disclose or suggest features of claim 1, from which claims 5 and 9 depend, that are missing from the Haruo et al. patent. Specifically, the Ohmori et al. patent neither teaches nor suggests “a portion of [a] second substrate [that] passes between at least two of the electrodes and extends from [a] second main

surface at least as far as the electrodes extend from the second main surface" as recited by claim 1. Therefore, claims 5 and 9 should be allowable for at least the same reason discussed above with reference to claim 1. Applicants respectfully request such allowance.

Claims 12 – 14 were rejected under 35 U.S.C. §102(b) as being allegedly anticipated by the Haruo et al. patent.

Claim 12 recites "positioning the second substrate in such a manner that a portion of the second substrate passes between at least two of the electrodes and extends from the second surface at least as far as the electrodes extend from the second surface." For at least the same reasons discussed above with reference to claim 1, claim 12 should also be allowable over the Haruo et al. patent. Applicants respectfully request such allowance.

Claims 13 and 14 depend from claim 12 and should, therefore, be allowable for at least the same reasons as claim 12.

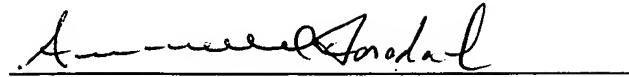
It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

No fee is believed to be due. However, please apply any charges or credits to deposit account 06-1050.

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Page : 10 of 10

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